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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,361	12/30/2003	James T. Ray	C03252US (60713.1C2)	7791

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EXAMINER	
KIM, TAE JUN	
ART UNIT	**PAPER NUMBER**
3746	

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/748,361	RAY, JAMES T.	
	Examiner	Art Unit	
	Ted Kim	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 3/15/04.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)). The specific reference to any prior nonprovisional application must include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number. Applicant is required to update the status to refer to parent application 10/304,200, filed 11/26/2002, now abandoned.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Claim 10, paragraph (g), "the impulse drive vanes" lack proper antecedent basis. See also the scope of enablement issue raised below for these vanes.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to teach how to make and/or use the invention, i.e. failing to provide an enabling disclosure. The invention as disclosed is not enabling because:

a) The apparatus cannot operate as an engine to produce useful torque or mechanical power. See pages 18-19 of the NASA Report on applicant's invention (submitted in parent 08/955,590). The declarations of Dr. Nguyen and Mr. Olivier indicates that the apparatus tested was identical to that disclosed in applicant's specification and claims. As the NASA Report indicates that the tested invention cannot produce useful torque and power, the apparatus is not enabled to operate as an engine because of the failure to provide a "mechanical ground" for which to provide rotational power. The NASA report also states in this section:

> "Even if combustion were to occur inside the chamber and useable torque was produced, **the engine could not spin on its own** since it has nothing to push against (other than to expend its power churning and thrashing the working fluid like a blender). In order for a net torque to be produced, ... [T]**this would entail a major redesign** of the mechanical internals of the MCCH engine ..."

b) Applicant's alleged combustion of the produced bubbles cannot operate the apparatus as an engine. It is noted that in the tests, applicant appears to utilize the starter motor *continuously* to operate the device and turned the starter motor off when the tests were concluded. At no time was the combustion of the bubbles being shown as being adequate to sustain operation of the

device without the mechanical work input of the starter motor. This is supported by the quotation above -- "the engine could not spin on its own." Under such conditions, applicant's device cannot be considered an engine which can produce useful work but rather as power consumer. Under such circumstances, it is more feasible to utilize the starter motor to produce useful work than applicant's disclosed "engine".

While the Examiner raised other technical issues in the first office action of parent 08/955,590 questioning whether bubble combustion can be sustained in applicant's claimed device, these questions are not satisfactorily resolved. The NASA report also indicates that "whether or not this high temperature event is precisely due to the rest of a bubble cavitation/implosion event phenomena *cannot be determined*" near the end of page 3 of the NASA report. Hence, while applicant alleges that the device operates under bubble combustion, the NASA report indicates that this allegation cannot be verified by skilled practitioners in the field. Consequently, the questions about the bubble combustion raised in the aforementioned first office action remain unsatisfied.

Furthermore, it would be beneficial if applicant were to do an analysis of the power output from the impulse drive blades, the torque blades, the reaction blades (which are the blades following the combustion location, depending on the embodiment) and compare the power output with the power consumed by the rest of the engine. An energy balance can also be performed to calculate the energy density/enthalpy required in the fluid before net useful work can be performed.

5. Claims 1-20 are rejected under 35 U.S.C. 112, *first* paragraph, for the reasons set forth in the objection to the specification.

6. Claims 10-20 are rejected under 35 U.S.C. 112, first paragraph, because the specification does not reasonably provide enablement for Claim 10. This claim now contains reference to four different vanes "pump blades," "reaction blades," "combustion channel blades," and "impulse drive blades." However, the specification only refers to three different vanes in any given embodiment, also raising a question of enablement.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1-20 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative to perform the claim result, as addressed above, and therefore lacks utility.

Response to Amendment

9. Applicant's arguments filed 7/6/99 and 8/4/99 in the parent application 08/955,590 have been fully considered but they are not persuasive. On applicant's first response of 7/6/99, applicant argued that based on the excerpt from the NASA report (only pages 1-6 were supplied), there was adequate evidence that the mere demonstration of applicant's invention to NASA and the test results produced were adequate to show operability of applicant's claimed device. As the excerpts provided by applicant were inconclusive, the Examiner requested that a full copy of the NASA report and declarations be provided by

some of numerous observers stating that the invention worked as disclosed and claimed. Applicant complied with the Examiner's request on 8/4/99 by supplying a full copy of the NASA report and three additional declarations. In that response filed 8/4/99, applicant argued that to satisfy 35 USC 101, the device must be capable of performing some beneficial function and does not have to be perfect or perform crudely. Applicant alleged that his device demonstrates partial success in performing a useful result based on the NASA report. However, after reviewing all the pertinent documents, the Examiner disagrees that partial success has been demonstrated. Upon examination of the full NASA report, notably on pages 18-19, which were not submitted on the first submission to the PTO, it became clear that

1) NASA cannot substantiate that bubble combustion is actually occurring -- "[W]whether or not this high temperature event is precisely due to the rest of a bubble cavitation/implosion event phenomena *cannot be determined*" see the end of page 3 of the NASA report and

2) NASA concludes that the device disclosed to the PTO cannot produce useful torque and power due to its lack of a "mechanical ground" and would require a "major redesign" in order to actually provide useful torque and power. Hence, the Examiner finds applicant's device does not perform a useful result, as required by 35 USC 101. Moreover, the rejection is not only under 35 USC 101 but also under 35 USC 112, 1st paragraph -- for failing to provide an enabling specification. As the NASA Report

indicates that the invention cannot produce useful torque and power, the apparatus is not enabled to operate as an engine for the reasons detailed on the aforementioned pages.

10. All claims are drawn to the same invention claimed in the parent application 10/304,200 accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

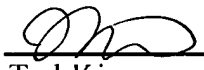
Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler, can be reached on 571-272-4834.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm



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